

The arqStream Encoder is an HD H.264 and MPEG-2 encoder. It supports ARQ and FEC error correction to enable reliable contribution over the public internet. It supports 3G-SDI, HD-SDI, SDI, and composite input and can be incrementally licensed from SD to 1080p50/60.

The arqStream supports up to 1080p50/60 and 4 audio channels encoding.

The arqStream has a unique patented Automatic Retransmission Request (ARQ) feed-back based error correction which allows reliable delivery over best effort networks such as the public internet. ARQ has similarities to TCP in that it informs the encoder if a packet has been lost during transit to the decoder, and requests a replacement to be sent. The principal benefit of ARQ video transmission over TCP video transmission is that TCP transmits an acknowledgement after each packet is received, where ARQ only transmits a negative ACK when a packet has been lost, minimising bandwidth overhead.

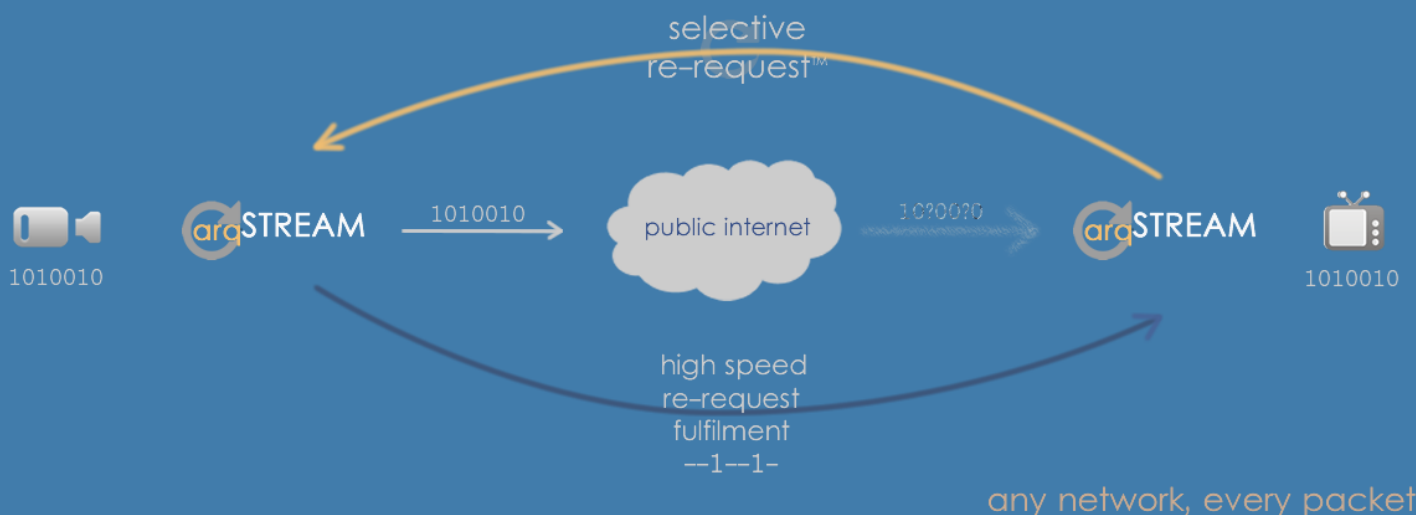
The arqStream opens up opportunities to leverage low cost high bandwidth public internet links such as SDSL and VDSL for high quality site to site contribution, remote news gathering and live event coverage.

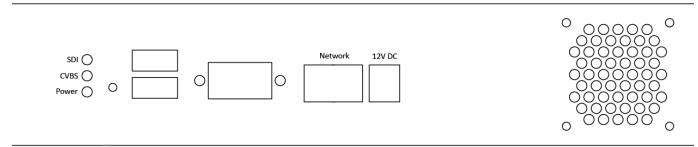
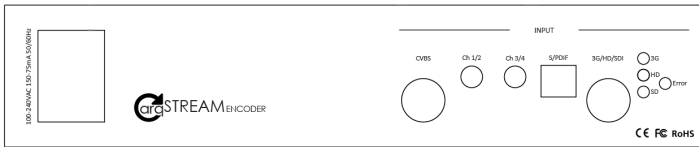
The device can be powered by 240VAC or 6 - 18VDC for flexibility.



- High quality HD H.264 video compression
 - Video pre-filtering
 - High, Main and Baseline Profiles up to Level 4.1
- Support for MPEG-2 compression
- ARQ & ProMPEG Forward Error Correction (FEC)
- Low latency mode - less than 500ms end-to-end
- Video formats up to 1080p50/60, PAL & NTSC
- SDI, HD-SDI 3G-SDI and Composite inputs
- Supports CBR & VBR bit rates from 200kbps to 20Mbps
- Up to 4 audio channels (2 stereo pairs)
- Compact encoder and decoder ½ width - 1RU
- AC and DC power inputs
- User definable GOP structure and length
- Optional licensable features; 1080i, 1080p.
- Low power consumption; 14 watts when encoding
- MPEG-1 Layer II, MPEG-2 AAC, MPEG-4 AAC
- Up & down scaling and frame rate conversion

how it works





Video/Audio Inputs

- Input** 1x 3G / HD-SDI / SDI (SMPTE 425M (A&B), 424M, 292M, 259M)
- 1x CVBS
- 2x Stereo Audio
- 1x AC3 Pass-through
- Connectors** 1 Female BNC (SDI)
- 1x Female BNC (CVBS)
- 2x Mini phono
- 1x S/PDIF

Video Encoding

- Video Decoding:** MPEG-4 AVC / H.264
 - Profile up to Level 4.1
 - High, Main and Baseline Profiles
- MPEG-2 Main Profile
- Constant bit rate or Variable bit rate
- Chroma Sampling** 4:2:0
- Bit Rate:** 128 Kbps to 20 Mbps

Audio Encoding

- Audio Decoding:** MPEG-1 Layer II, MPEG-2 AAC-LC AC3 (Pass-through)
- Sample rate:** 32, 44.1, & 48 KHz
- Bit rate:** 16 Kbps (mono) to 384 Kbps (stereo)
- Audio Channels:** Up to 4 mono-audio channels (2 stereo pairs)

IP Encapsulation

- IP Encapsulation:** MPEG-2 Transport Stream over RTP/UDP/IP, UDP/IP (SMPTE 2022-1/2)
- IP Bitrate:** 160 Kbps to 20 Mbps , 15Mbps w/ARQ
- Encryption** 128-bit AES
- Error Correction:** ARQ (feedback-based)
- Forward Error Correction (ProMPEG FEC) (FEC SMPTE 2022 FEC annex B only)

Video Resolutions

- SD Video:** 625 lines, 25 frames/s (576i)
- 525 lines, 29.97 frames/s (480i)
- HD Video** 1080p60/59.94/50/30/25/24/23.98
- 1080i60/59.94/50 and 720p60/59.94/50

Network Interfaces

- Networking port:** 1 Gigabit Ethernet, 100/1000Base-T on RJ-45 connector
- Protocols:** IEEE802.3 Ethernet
- RTP, IPv4, TCP/UDP, IGMP v3
- External storage:** Flash & hard drives via 2 USB connectors

Control & Management

- Type:** Gigabit Ethernet, 100/1000Base-T
- Features:** Web-based HTTP GUI
- SNMP traps
- Connector:** RJ45
- Maintenance Port:** RS232 9 pin D-SUB

Physical & Power

- Input Voltages:** 120 - 240V AC 50/60Hz or 7 - 16V DC
- Input Currents:** 150 - 75mA for AC or 3.0 - 1.0A for DC
- Input Power:** 18W
- DC Connector:** 2.5mm I.D. x 5.5mm O.D. x 9.5mm Female
- Chassis:** 210 x 135 x 44 mm (WxDxH)
- Two units in 19" 1RU rack space
- Installation:** 19" 1 RU rack mount
- Net Weight:** 0.75kg

Environmental Conditions

- Operating temperature:** 0°C to +55°C
- Storage Temperature:** -20°C to +70°C
- Relative Humidity:** 5% to 95% (non condensing)

Compliance

- CE:** 73/23/EEC (Low voltage equipment) 89/336/EEC (Electromagnetic compatibility)
- Safety:** IEC60950 and EN60950
- EMC:** EN55022, EN55024, EN6100-3-2

Part#	Description
ARQ-Enc	ARQStream Encoder appliance. ARQ & FEC.
ARQ-E-HD-SDI	ARQStream license for SDI input.
ARQ-E-HD-1080i	ARQStream license for 720p and 1080i encode.
ARQ-E-HD-1080p	ARQStream license for 1080p, requires ARQ-E-HD-1080i.
ARQ-E-Ext-Warranty	Additional 1 year warranty for ARQStream Encoder.